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ABSTRACT

To provide firsthand knowledge of investigators and institutions for the evaluation of grants proposals, the Grants staff or Research Corporation visits hundreds of colleges and universities each year. Their finding reveal that department chairmen have a unique influence on the conduct of research and the motivation of students, as well as the total environment in which faculty and students work. Working sessions for heads from public and private institutions are reported. Each conference included 18 newly appointed chairmen, three highly successful resource people, and several additional special discussion leaders. Topics covered included: the chairman as administrator; responsibilities of the department leader; creating and sustaining an active department (e.g., recruiting new faculty members, faculty evaluation, stimulating creative activity); current departmental problems in chemistry, physics, and biology; managing money and obtaining support; heads' recruiting and advisory responsibilities to the students; and planning for the future. Appendices provide the Student Course Evaluation Form; Faculty Evaluation Form; foundation center regional collections; and typical life history of a Research Corporation application. (LBH)

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Notes on the 1974 Conference for New Science Department Chairmen at Private Institutions

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Point Clear, Alabama

July 15 - 19, 1974

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1974 Conference for

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INTRODUCTION

To provide firsthand knowledge of investigators and institutions for the evaluation of grants proposals, the Grants staff of Research Corporation visits hundreds of colleges and universities each year. From this close view of academic science, it is continually apparent that department chairmen have a unique influence on the conduct of research and the motivation of students, as well as the total environment in which faculty and students work. Strong departments inevitably have -- or recently have had -- effective chairmen.

Although individual styles differ, there are certain characteristics that personify effective chairmen: a genuine concern for blending the interests of faculty and students, the ability to harmonize the department's activities with those of the whole institution, a capability for judicious administration and personal qualities of leadership.

How do chairmen reach this pinnacle? Very often chosen on the basis of measurable achievements as faculty members but only promise as administrators, new chairmen take up their posts with virtually no preparation. Yet the decisions they must make will have crucial consequences. The new chairmen

have to hit the track running, for from the first day they are helping to make or break their departments and influencing, however subtly, the course of their institutions.

To help new chairmen get moving quickly, Research Corporation again in 1974 conducted separate week-long working sessions for heads from private and public institutions. Each conference included eighteen newly appointed chairmen, three highly successful resource people who could draw on their own experiences as department heads, and several additional special discussion leaders.

The informal notes which follow are those of the conference for privately supported institutions. The conference was not intended to be all-inclusive, but to provide coverage of those topics which were of current interest to the chairmen. Those who have read the notes of earlier meetings, however, will observe that there are certain recurring problems for which new solutions are still being sought.

Copies of the counterpart notes of the 1974 conference for heads at public institutions are available from Research Corporation, as are copies of the notes of the sessions held annually since 1971.

Although no conferences will be held in 1975, a book based on the seven sponsored to date by the foundation is being prepared as an aid to new chairmen in tackling a job that has been described as "the most frightening, most ill-defined, most challenging of any in academe."

THE CHAIRMAN AS ADMINISTRATOR

The success or failure of the science department often hangs on the ability of the department leader. If he can make an organized effort to push the faculty forward, to give them maximum credit for their contributions, an atmosphere conducive to success will develop.

Working constructively with faculty, however, is only part of the job. It comes as a shock to some that they have moved overnight into administrative positions and that as administrators they have taken on a whole new set of duties and responsibilities. The chairman must overcome any false modesty to exercise leadership. This does not mean becoming the "boss" but it does mean becoming the "manager."

There are many ways to manage, variously successful according to the individual's personality. Some may manage with a low profile by indirection and example. Others will manage equally well with a higher profile and more direct leadership. One thing which will not tend toward success is to merely reflect the average view within the department, however much this may ingratiate the head with the faculty. The "manager" cannot be successful without accepting the responsibility for

leadership, and this entails taking a broader view of the department as a unit in the whole institution.

In the sciences this may involve giving service courses for other departments or schools within the college. Conversely it can involve dependence on other departments for the prerequisites of the scientific discipline. For a curriculum to be successful, efficient and non-redundant, there must be a close relationship among departments and their chairmen.

Department chairmen play essential roles as intermediaries with the college administration. They provide the primary point of faculty contact for the president and dean, and are the means by which communications from the institutional level can be promulgated and explained. Similarly, from day-to-day personal contact with the faculty and students, the chairman can relay upward those matters which are of greatest concern, together with suggestions for avoiding or ameliorating problems which arise. The department leader is thus a two-way communications channel, preventing those breakdowns that mark failure in higher education and all other human endeavors.

The department leader must plan ahead. The college administrators will appreciate input from the chairman -- indeed they must have it if they are to be effective -- as to what may be happening next year, the year after, or perhaps three years hence. This input may anticipate some heavy budget demand such as equipping a laboratory for a new course, purchasing an expensive piece of apparatus or developing library resources in some new direction. By informing the president

of what is coming, the department leader can get these items into proposed budgets, and it will be that much easier to win approval when the time comes. As much a chore, and equally essential, is planning for new courses and new areas of research, both with respect to faculty and to support facilities (stockrooms, shops, inventories) and personnel.

Of all forward plans, the most difficult and critical to carry out involve recruitment of new faculty, termination of those unable to meet the department's standards, and retention and promotion of faculty members who will enhance the reputation of the institution. Termination is by far the hardest alternative. On the other hand, a mistake once made, deterioration in performance, an inability to function under pressure, all call for correction in the interests of both the institution and the individual.

Many more mistakes have been made by continuing faculty members who should have been terminated than by failing to retain those who showed promise. While those whose positions are at stake may generate sympathy, termination has reawakened at least some teacher-investigators and enabled them to find more compatible jobs elsewhere. An understanding administration will appreciate the department leader's position and try to lighten the personal anguish which accompanies termination.

The chairman's responsibility for quality has far-reaching effects on the whole institution. Without a good faculty there is a shortage of high quality students, little good teaching and few innovative curricular developments. Where there is

faculty development and strong departmental leadership there is excellent teaching, imaginative curricular developments and able and interested students.

Being a successful chairman calls for a variety of talents, personal abilities and determination. The position is far from a sinecure, yet it can be the most sensitive, the most constructive and certainly the most satisfying within the institution.

RESPONSIBILITIES OF THE DEPARTMENT LEADER

A recent editorial in the Journal of Chemical Education[1] summarizes the situation in the academic community. "The psychological depression that grips a wide segment of faculty and academic administrators is as understandable as it is debilitating. Enrollments are dropping, financial support is diminishing, jobs for graduates are declining, resentment and skepticism toward higher education continues, heightened by the general despair of the time."

The editorial continues, noting that for the most part academicians respond either with panic or with lordly indifference. And it suggests that failure to develop a realistic self-conception makes the academic mind more vulnerable and less able to handle these problems than it need be.

Development of a realistic self-conception is nowhere more important than in the chairman, for effective leadership in the academic community begins with the department. Discussions with faculty and administration might be used to clarify the department leader's concept of his job, both as an

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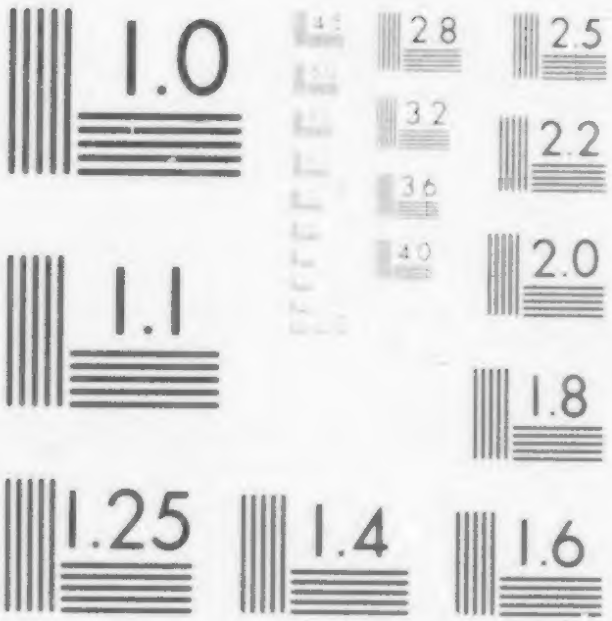
1. "For Faculties: A Cure for Depression," Lippincott, W. T., Journal of Chemical Education, 217, April 1974.



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963-A

idealized abstract and as it actually exists.

As the 1974 conference for private colleges got under way, only two of the eighteen participants felt they were expected to be active leaders of their departments; the remainder considered themselves cast in the role of "chairman" in the sense of one who chairs a meeting. While well over one half of the group were appointed by presidents of institutions, less than one half considered themselves to be responsible to their presidents. (At the conclusion of the conference there was a vast change in this self-conception.)

The degree of responsibility given to or assumed by the department leaders varied to a great extent. In most cases participants considered it their responsibility to supervise employment practices and to recommend who should be hired or fired; generally such departmental recommendations have been followed. Only in rare cases was it reported that administrative offices hired faculty members without strong recommendations from the department.

In most cases chairmen were given considerable authority in such matters as adjusting credit hours and assigning non-teaching as well as teaching duties. The desk of the department head is the point where complaints eventually wind up, it was observed, and members of the department usually feel that the head is invested with more than one vote in the decision making process.

Lacking in most faculty handbooks is a detailed summary of the responsibilities of the department leader. In the ab-

sence of clear guidelines, chairmen tend to assume powers that are not explicitly denied them. This situation was generally regarded as desirable by conference participants, although it was felt that the role and the authority of the department head should be more tightly defined.

Perhaps as a result of poor role definition, some faculties tend to be self-propelled and freewheeling. This can lead to anarchy or effectiveness depending on the leadership of the chairman. For him to put together a superior department in such a situation may depend on his ability to formulate goals which dovetail closely with those of the institution. If relationship between department and institution are clear in the chairman's mind and if he is a successful communicator, there can result a lively department which is meshed to the broader aims of the whole college.

In his book, "Strengthening Community in Higher Education," John D. Millett[2] suggests that there are two major deficiencies in academic leadership, both of which arise from a preoccupation with power rather than with other equally vital concerns. The first is a separation of power from purpose; the second a separation of power from performance.

"Governance, management and leadership are not ends in themselves," he continues. "Much of the discussion of these matters tends to overlook the purposes of the college or university and views power as an end in itself...I propose to

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2. "Strengthening Community in Higher Education," Millett, John D., Academy for Educational Development, Inc., Washington, D.C., 1974.

emphasize that governance in higher education must above all be concerned with purpose, that management must be concerned with performing services, and that leadership must be concerned with decisions about purpose and performance."

This well-formulated statement could serve as a guideline for all assuming departmental leadership.

CREATING AND SUSTAINING AN ACTIVE DEPARTMENT

Recruiting New Faculty Members

One of the greatest opportunities to shape an active department is through recruiting. Ideally a new faculty member will not only meet the department's special requirements, but round out its capabilities -- this without displacing other staff members or forcing them to an accommodation. Flexibility as well as expertise in a specialized area may often be desirable.

Beyond the criteria established for recruiting and the broad interests of the department, the interests of the new faculty member and various legal requirements must be considered. In the latter category are the institution's equal employment opportunities and its affirmative action program.

In general, affirmative action will require more than neutrality with regard to race, religion, sex or national origin of candidates. The employer is required to make additional efforts to recruit, employ and promote qualified members of minorities. The institution must be able to demonstrate that it has well-defined criteria for an open position, and proof of an active search for minority candidates may be required.

Part of this process will involve identification of the pools of available candidates having the necessary qualifications. It is to the department's and institution's advantage to advertise widely to provide a greater pool for selection, while at the same time being as specific as possible as to qualifications. To the extent possible, public announcements and initial letters to candidates should spell out employment policies.

Crucial for the chairman in this sensitive area are federal policies as well as those of the institution. The former are laid down in Executive Order 11246, "Higher Education Guidelines," which is available from the Regional Offices for Civil Rights or from the Office for Civil Rights, Department of Health, Education and Welfare, Washington, D.C. 20201. More recent HEW publications and announcements place new interpretations upon these original guidelines.

To the extent that well-formulated goals exist, they might be communicated to job candidates in initial letters. The head may choose, however, not to describe in detail the role the department sees for the new faculty member, but to give candidates opportunities to express their own interests and ideas. This will give the chairman some indication of independent thinking and the opportunity to gauge the extent to which the candidates' ideas mesh with those of the department.

Following an initial screening of applications (a sizable task when there are many applicants), further information is in order. More pertinent and objective information will be

obtained if the department itself requests letters of recommendation from referees rather than having them provided by applicants. An additional advantage is that the chairman can spell out for referees precisely the conditions and criteria which will be used in evaluating applicants.

Important in evaluating candidates is concrete evidence that they have already demonstrated the desired qualities. The search should be for an individual who sincerely wants to further the department's objectives, not just someone who seems willing to. Candidates should be given at least the department's rough schedule for evaluation so that all concerned will be working within the same time framework. Notification should be given if serious deviations become necessary.

It is useful to have personal interviews with as many candidates as possible, even at the preliminary stage. With prior planning, interviews can be arranged at professional meetings; applicants close to the institution can be invited to the campus. Providing they understand the qualifications a candidate should have, alumni or other friends of the college can conduct preliminary interviews in more distant locales.

When the list has been reduced to a few very well qualified candidates, they should be invited to the campus for expanded interviews; they might also be asked to give seminars or lectures for students during regularly scheduled class periods.

One member of the faculty might be designated to become familiar with the background of each candidate prior to his

visit, to meet with him in advance of other interviews, and to act as host. This individual and all others who have contact with the candidate should make an effort to present the best aspects of the institution, the department and its program in the context of honest discussions of problem areas. To be considered are those who, having been apprised of the good and the bad, show genuine enthusiasm for taking the post.

Several seriously interested finalists will allow the department, and not a candidate, to make the ultimate decision. Once an offer has been tendered and accepted, all other candidates should, of course, be notified in friendly and diplomatic fashion.

Faculty Evaluation

Evaluating the members of the department may prove not only difficult but distressing, especially in small departments where all members of the faculty and their families are known personally. Nevertheless, evaluation must be undertaken, and only care and planning can assure a constructive approach which minimizes adverse reactions.

Obvious objectives of an evaluation procedure are to facilitate decisions on advancement, granting of tenure and salary increases. Another, and equally important, consideration is faculty improvement -- helping faculty members upgrade abilities and performance. Typical evaluations include some measure of competence in the discipline, teaching ability, pro-

fessional activities, advising, campus activities and working relationships within the department.

The relative importance of these elements varies according to the goals of the department, and methods of making judgments are usually tailored to the institution and department concerned. Variations in goals and methods notwithstanding, the criteria to be used in the evaluation should be made clear to all faculty members prior to the start of the year. The results for each individual should be discussed privately with that person as soon as possible.

Assistance in developing an effective evaluation procedure can be obtained from a variety of sources, including "Evaluating Faculty Performance" by Richard I. Miller,[1] "Professors as Teachers" by Kenneth E. Eble,[2] as well as from "Strategies for Improving College Teaching" by John A. Centre.[3]

A broadly based evaluation procedure may involve students, other faculty and perhaps alumni or other interested parties outside the college. Student evaluation forms are available from a number of sources including the Educational Testing

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1. "Evaluating Faculty Performance," Miller, R. I., Jossey-Bass, Inc., San Francisco, 1972.

2. "Professors as Teachers," Eble, K. E., Jossey-Bass, Inc., San Francisco, 1972.

3. "Strategies for Improving College Teaching," Centre, J. A., American Association for Higher Education, Washington, D.C.

Service which has produced two excellent reports.[4] Another source of information is the paper entitled "A Survey of the Literature Concerning Student Evaluation of Teaching" by B. R. Siebring and M. E. Schaff.[5]

Schemes for measuring teaching competence differ depending on what elements are included. In addition to methods of presentation, performance in teaching may include competence in the development and modification of courses, in pedagogical activities and in laboratory presentations. Evaluation procedures are also dependent upon class sizes and other factors which may be beyond the control of instructors.

Observation of teaching is a difficult matter even when the chairman has developed a good rapport with faculty members. However, some observation is probably necessary if only to evaluate student ratings. Team-taught courses present opportunities for the evaluator to drop in from time to time, and invitations might be sought to attend other classroom sessions.

Audio-video techniques also offer a method of observation, but are most effective in permitting self-evaluation by the faculty member. If used, videotape should be presented as a method of self-improvement.

The chairman's evaluation can be supplemented through

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4. "The Student Instructional Report: Its Development and Uses," SIR Report No. 1; "Two Studies on the Utility of Student Ratings for Instructional Improvement," SIR Report No. 2, Centre, J. A., Educational Testing Service, Princeton, N.J.

5. "A Survey of the Literature Concerning Student Evaluation of Teaching," Siebring, B. R. and Schaff, M. E., Journal of Chemical Education, 51, 150-1, 1974.

organized self-evaluation by each member of the department. This may take the form of goals to be set by the individual and to be followed by self-appraisal of performance as against the goals.

An example of materials for student evaluation of a course is contained in Appendix A. Appendix B reproduces a faculty evaluation form used in a large graduate department. Such materials lend themselves to adaptation for use in different situations.

Stimulating Creative Activity

Improvement in the quality of faculty teaching and professional activities rests on the chairman's evaluation of past performance and his knowledge of personal aspirations. With these in hand, it is possible to counsel faculty members on their strengths and weaknesses and to suggest measures for improvement.

Positive reinforcement of strengths is often effective -- the head might be liberal with his compliments and stingy with criticisms. If changes are needed and are to be suggested, they might be manageable changes that are neither miniscule nor earthshaking.

One effective technique, in both personal interviews and meetings, is to discuss the large topic of creative teaching and direct the conversation toward areas which need further work. It is, of course, advantageous to discuss problems be-

fore they arise or before they become serious, and to do it in general terms rather than with regard to an individual's performance.

It may be very difficult for a young faculty member to get an effective start in scholarly endeavors, not to mention teaching and professional activities. The chairman may often have to take the lead in finding the resources for a newcomer to initiate research activities, and the department may be called upon to provide financial backing. Both time and resources for research might be best provided at the beginning of an incoming faculty member's career. The timing is important, for the responsibilities which come later will encroach on the newcomer's energies and possibly decrease his motivation. The chairman's attitude toward research is all important.

In addition to postponing committee assignments, it may be possible to assign a new staff member a reduced teaching load and avoid giving full responsibility for any one course during the first semester. Where team teaching is part of the department's program, it provides a convenient way to make the incoming faculty member aware of the students' level of understanding and to introduce him to instructional techniques.

Adjusting to undergraduates after years of graduate training can be a problem, and young people may make an unhappy start as teachers unless made aware of student limitations. The chairman might recommend that the new staff member start with a rather simple approach and then upgrade it to meet the

needs of the students. Such a strategy also builds student confidence, and a teacher might be encouraged to do this just as the chairman attempts to build the confidence of the faculty.

As a continuing responsibility, the department head will want to insure that examinations are as constructive as possible. At one institution, for example, a copy of every examination is filed in the department office. The file gives the chairman the necessary materials to guide new and inexperienced faculty members and alerts him as to when corrective action is needed.

At one college represented at the conference, lecture assignments are held to a minimum during the newcomer's first year. In their place, he is asked to take responsibility for laboratories and discussion groups. At another institution, incoming staff people are urged to critically examine tradition and to recommend new ways of conducting such teaching activities.

As they progress, new faculty members might be made aware of the need for flexibility by giving them the opportunity to teach courses in areas other than the one in which they specialized in graduate school. Assignments should be varied in any case, especially during the early years. (Rules in effect at some institutions insure that an instructor will not give the same course in consecutive years for more than a three-year period.)

Upgrading the teaching of senior members of the depart-

ment calls for patience, reasonable requests and realistic anticipations. Improvement must be attempted in such cases, for termination of tenured faculty members is rare. Care is called for: Ostracizing a poor teacher or criticizing him unnecessarily may make him worse. He is a human being with deep sensitivities, and it should be assumed that he is a dedicated person who wants to be a good teacher even if he himself is blind to his failings.

Given a good relationship with the individual, the chairman can attempt to offer suggestions and to provide positive reinforcement by recognizing past accomplishments. An assignment which is assured of successful completion can be used to strengthen the teacher's own sense of self-worth. Collaboration between senior and younger staff members may also have a desirable effect. The latter may provide the creative ideas and the former the knowledge gained through experience that can result in a worthwhile program.

Another good approach is to work with the department as a group rather than with individuals. Interim terms, orientation periods and summer programs offer opportunities to present short courses for the faculty on various teaching techniques or the use of newer types of equipment. Ideally, the target faculty member will be pulled along by the enthusiasm of the rest of the group.

CURRENT DEPARTMENTAL PROBLEMS

While separate conferences were held for chairmen at institutions in the public and private sectors, their simultaneous scheduling permitted joint disciplinary meetings for chemistry, physics and biology. Reported below are the problems singled out as being of the greatest urgency in each field.

Chemistry

Placement of students remains one of the critical problems facing chemistry departments. While the general consensus was that opportunities improved in 1974, the change has been primarily in increased job openings in industry; the teaching profession seems to be a closed field. Since many private institutions have developed chemistry programs geared to preparing students for graduate study and academic careers, the change in the job outlook may dictate alteration of course content.

Prospective employers have urged that more industrially applicable examples be used in teaching chemistry, and there is ample evidence that majors are often not given an understand-

ing of the economics of the chemical industry.

One method of integrating such material into courses involves assigning students "impossible" problems -- for example, developing a method of getting 100 people to the moon -- and requiring them to develop a procedure and a cost analysis for accomplishing it. In other cases students may be asked to do a cost analysis on each preparation assigned to them as a laboratory exercise. Students might also be made conscious of the cost of equipment and supplies they use, and taught to make decisions based on cost as well as results desired.

The need to recruit more women chemistry students remains a problem. Women may tend to have a weaker background in high school mathematics than men, it was suggested. A department seeking to encourage more women may find it necessary to provide for further math training early in the program.

There seems to be a definite trend toward multi-track programs and this is heightened by the needs of, and students interested in, medicine, biochemistry and various industrial areas. Some of these fields, especially biochemistry, are particularly attractive to women. Changes may be required in the chemistry curriculum to accommodate such programs.

Increased costs in chemistry laboratory programs was a topic that received considerable attention. (See page 25 for an in-depth discussion of purchasing procedures.) At least one institution has been able to stretch its budget by buying secondhand equipment, although maintenance costs are a sizable

and increasing problem. An on-campus electronics technician becomes almost imperative for a well-equipped department. There may be some advantage in establishing cooperative arrangements with neighboring institutions.

Physics

One of the major problems facing science departments in undergraduate colleges is the overwhelming number of premeds. Such students seem to have spilled over from chemistry and biology into physics, where they sometimes overshadow potential physics majors in lower level courses. Their presence may tend to alter the presentations, and the pressure on the faculty to give high grades may affect the quality of teaching.

There appears to be no concrete evidence that the quality of physics majors is declining despite a comment to this effect. The general conclusion was that the quality of students intending to pursue physics as a profession is really no lower, but that poor students may stand out among a declining number of majors.

Many physics departments have traditionally prided themselves on attracting the top students and producing the graduates with the best scholastic records in their institutions. This history may have been detrimental to the general health of the field. Certainly it is the responsibility of the department to give all students an opportunity to learn more

about physics as a fundamental science; it follows that the faculty must give attention to the needs of the nonmajor in designing course offerings. The need to tailor courses to the students available is not necessarily synonymous with downgrading.

Biology

The principal problems facing biology departments today were described as:

- Increased numbers of students without increased faculty.
- Increased enrollment of premedical students.
- Increased costs of equipment, supplies and materials.
- A possible conflict between molecular and classical biologists.

The first and second points were of overriding concern to participants. The existence of large numbers of students whose interests are not primarily in biology as a career is having a detrimental effect on some courses. One of the serious problems associated with the large increase in premeds is the counseling of students who may not be accepted by professional schools. Such counseling should be done early in the student's college career so that acceptable alternatives can be found.

Participants took a rather optimistic view of the job market, especially as it exists in molecular biology and biology related to the medical sciences.

MANAGING MONEY AND OBTAINING SUPPORT

Purchasing

At a time when departmental budgets are decreasing in purchasing power if not in dollars, it is imperative to plan purchases to secure maximum value.

Most small, private colleges are preferred customers of scientific supply houses -- they pay their bills on time. This, plus the fact that suppliers are geared to handle small orders (the average order for most is under $100), means that it is not always necessary to accumulate several small orders to make a large one. On the other hand, freight charges may be prepaid on larger orders -- no longer an insignificant item.

While a perpetual inventory is needed for a department to get the maximum from its supply budget, few have well organized systems. In the absence of someone who can keep the necessary records, students might be asked to help.

The usual basis for orders is still the catalog list, but with catalogs costing $6 or more per copy, suppliers are not publishing them as often as in the past. The copyright date is an indication of what price adjustments may be expected: A year-old catalog may be 15 to 25 percent low in its list prices. Prices vary between one supply house and another,

and are subject to frequent changes due to inflation and rapid inventory turnover (typically three to four times a year).

According to an industry spokesman, available discounts have decreased as profits have declined. Reduced profits are traced to reduced spending for equipment and supplies by many institutions, and the fact that scientific supply houses must continue to maintain large inventories and sizable accounts receivable. As a general rule, orders which contain discountable items such as equipment and hardware may qualify for a greater discount than orders made up exclusively of non-mailable or breakable supplies.

List bidding or contract buying are usually more economical ways to purchase than ordering straight from a catalog at list prices. Recommended in securing list bids from competing companies are clear, well-organized lists containing all specifications for equipment and supplies, any special steps to be taken by the supplier, and information on whether the list is to be bid in whole or part. Also suggested is that one "cost out" the list by entering catalog prices; sufficient room should be left for companies to itemize bid prices.

The date a list is submitted is a factor in determining the discount. Summer is the peak season for most supply houses. Less attention is given to orders and suppliers are more reluctant to lower prices. Bid requests forwarded between late October and early February may result in both better prices and service.

A company can give the largest discount on items it manu-

factures, and a list for a particular firm should include as many of that company's in-house items as possible. If the specialties of the various suppliers are not known, information can be secured from sales representatives. None of the supply houses make glassware and few manufacture chemicals.

Among the disadvantages of list bidding is that the supplier may make substitutions; the purchaser must check to insure that substitutes meet required specifications, both on the bid he receives and on receipt of the items.

Contract buying, on either a semi-exclusive or exclusive basis, follows a slightly different procedure. A semi-exclusive contract seems to be most advantageous for smaller institutions, for it gives them added flexibility in purchasing company-produced items from various firms.

Buying by contract has the large advantage of making it possible to order periodically at relatively good prices. (It is especially useful when purchasing is done for several departments, since it is difficult to prepare a combined list for bidding purposes.) On the other hand, prices on a list bid will generally be better than those under contract.

Essential in determining whether or not to purchase by contract is a breakdown of items bought in previous years, volume and dollar amount. The department head might ask the institution's business officer to run a tape on past purchases from all suppliers. With this information, some indication of the department's budget for the year and what supplies and equipment will be needed, various company representatives can

be asked to visit for the purpose of discussing contracts.

An important consideration in contract talks will be a breakdown of items to be purchased and an estimate of the total. It is usually acceptable for 15 to 20 percent of the business to be placed elsewhere under semi-exclusive (or even exclusive) contracts, but the discount usually increases with an increase in the amount to be given to a particular company. The mix of items to be ordered is also a factor. Orders that will include expensive equipment warrant a larger discount than orders made up of small items.

Company representatives should be questioned about general discounts under contracts, and any discrepancies (as revealed by catalogs, price lists and previous purchases) resolved. Suggested was that a broad discount rate is preferable to "pipe deal" situations -- cases in which different discounts are offered on chemicals, supplies and equipment. Other concessions are possible: Prepayment of shipping costs on orders above $50 is a reasonable expectation, for example. Payment is usually requested within 30 days but seldom demanded.

When fast delivery is necessary orders can be placed by phone, but it is usually essential that a responsible representative of the company understand that time is of the essence and preferential treatment is desired. Failing such instructions, orders received in the morning may not be processed until the next day, negating much of the advantage of ordering by phone.

Prompt payment helps to maintain good relations and can

be used as a lever in future dealings. At the same time, items received in poor condition or which do not meet specifications should not be paid for. It was suggested that one should handle such cases by adjusting the bill for unsatisfactory items rather than by withholding payment. (Some suppliers may cancel back orders until a bill is paid.)

The department head might take advantage of the services provided by the regional representatives of supply houses. Among them are keeping the chairman abreast of new developments in instrumentation and equipment, changes in pricing and assistance in setting up inventory and accounting systems.

Seeking Outside Support

With many institutions currently unable to adequately finance science, chairmen are increasingly called upon to help raise funds. There is money available from outside sources to assist the various programs of an academic science department, but not nearly enough to meet all of the needs. Efforts to secure these resources require careful planning and close coordination between chairmen, college development officer and other members of faculty and administration.

The development officer is at best a strong ally in departmental efforts, and the entire institution benefits when heads work closely with him. The chairman might take the initiative in arranging a preliminary meeting, offer the assistance of the department in carrying out development plans for

the college, make clear that any planned department fund-raising will not compete with an overall program, and seek the development officer's assistance.

It may be difficult for this administrator to spend more than a minimum amount of time on the problems of a particular department, but he should at least be informed of its urgent needs and the rationale for them. Also useful to him may be summaries of interesting research and other activities, curriculum changes and potential sources of aid which come to the attention of the department. It may be very useful to invite the development officer to visit the department's laboratories to see what equipment is available and to discuss specific requirements with the faculty.

Various members of the department might be made available to assist with prospective donors. An enthusiastic but honest, straightforward approach is probably best in such contacts. Students can also help sell the college and the department to visiting contributors, and youngsters might be identified who are prepared for this experience and who are, in fact, interested in helping.

In return, the development officer should keep the chairman informed of various sources of funds and of changes in the special interests of these agencies or individuals. Also available from most fund-raising offices will be information on individual donors, foundations and other charitable organizations. The office should be able to give the department help in preparing and distributing proposals -- typing and

duplicating services at a minimum.

The initiative for acquiring funds for departmental purposes will usually be with the chairman and other members of his faculty. Proposals to outside sources should always be made with the knowledge and approval of the development officer to eliminate any potentially disadvantageous overlapping of efforts. Typically this is done by routing an investigator's proposal through the offices of the chairman, the dean, the business officer, the development director and possibly the president. Although time-consuming, such procedures insure that all are aware of a request and give various administrators the opportunity to offer comments and assistance.

A vital preliminary in preparing a proposal is to define the goals of the program, taking into account the department's current priorities and its short- and long-range plans. The logical next step is to identify likely prospects, and these include not only federal agencies but local foundations, charities, industries and individuals with interests paralleling those of the department and the college.

One of the most useful sources of information on past funding is the "Annual Register of Grant Support."[1] A guide to fellowship and grants programs of government agencies, foundations, business and professional organizations, it can be extremely valuable in searching for a funding source with interests which correspond to those of the department and its

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1. "Annual Register of Grant Support 1974/75," Marquis Who's Who, Inc., Chicago.

faculty members. Somewhat similar is the "Handbook of Aid to Higher Education by Corporations, Major Foundations, and the Federal Government."[2] It is organized by sources of support and amended periodically.

Another source is the Taft Information System "Foundation Reporter,"[3] a volume containing reports on 248 major American foundations chosen on the basis of level of assistance, amount of grants made annually, geographical focus and location, and fields of interest. In addition Taft publishes a monthly News Monitor of Philanthropy.

Detailed information on federal support can be obtained by writing appropriate agencies directly; general information is available in "Federal Support to Universities, Colleges and Selected Non-Profit Institutions"[4] from the Government Printing Office. Various subscription publications such as Federal Notes,[5] a weekly from the Office of Federal Notes, University of Southern California, provide additional data. "Funds for Undergraduate Biology and How to Find Them"[6] is

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2. "Handbook of Aid to Higher Education by Corporations, Major Foundations, and the Federal Government," Council for Financial Aid to Education, Inc., New York, N.Y.

3. "Foundation Reporter," Taft Information System, Washington, D.C.

4. "Federal Support to Universities, Colleges and Selected Non-Profit Institutions," U.S. Government Printing Office, Washington, D.C.

5. Federal Notes, University of Southern California, Los Angeles.

6. "Funds for Undergraduate Biology and How to Find Them," American Institute of Biological Sciences, Washington, D.C.

representative of the type of grants information available from professional societies.

Probably the most authoritative and complete source of foundation information is The Foundation Center, 888 Seventh Ave., New York, N.Y. 10019 and 1001 Connecticut Ave., N.W., Washington, D.C. 20036. The two libraries contain extensive collections of books, documents, reports and current files on the activities and program interests of more than 26,000 U.S. foundations. A national collection has also been established at the Donor's Forum, 208 S. LaSalle St., Chicago, Ill. 60604. In addition The Foundation Center has established regional reference collections throughout the country that have information on regional and state foundations as well as Center publications (see Appendix C).

"The Foundation Directory,"[7] compiled and updated periodically by The Foundation Center, lists over 2500 foundations with assets of $1 million or more, or total contributions of $500,000 or more per year (in total, about 90 percent of all U.S. foundation assets and 80 percent of all foundation giving). The Center also prepares the bimonthly "Foundation Grants Index" published by the Council on Foundations in Foundation News.[8] The Index records reported grants of $5,000 or more, including amounts, purposes and grantees.

The field of science and technology accounts for 12 per-

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7. "The Foundation Directory," 5th Edition, 1975, Columbia University Press, New York, N.Y.

8. Foundation News, Council on Foundations, New York, N.Y.

cent of foundation giving, and is fourth on the list of fields supported (the top three are education, health, and welfare). A vastly smaller proportion is available for support of fundamental research. Foundation giving for research is usually through well-defined programs; a proposal should be presented with the understanding that, within these limits, the foundation seeks to invest funds in the outstanding people and projects that will advance its stated objectives.

In preparing a proposal for any outside agency, the applicant might put himself in the "other guy's shoes." A clear, succinct statement of the significance of the work should be followed by a well thought out plan of attack. Evident from the proposal should be the competence and enthusiasm of the investigators, and internal support for their project. Suggested budgets should be realistic, and might indicate plans for securing continuing support.

Proposals should follow the agency's instructions as closely as possible; it is better to forward a neat <u>original</u> rather than a copy. Personal contacts with agencies may be desirable if those involved welcome them (practices vary). In any event, enough time should be spent preparing the proposal to build the best possible case for support.

Experience indicates that factors contributing to rejection include lack of significance and originality; ambiguities and inaccuracies; diffuse, superficial or unfocused plan; incomplete understanding of the status of the field; questionable reasoning; failure to ask key questions; plan based on

unsound hypothesis; lack of proper background and experience, or unrealistic requirements. An unsuccessful applicant might attempt to analyze his proposal to determine if he is guilty of any of the foregoing errors. With intense competition prevailing, a turndown is far from a tragedy, and another try is certainly appropriate. Several publications containing helpful hints on grantsmanship are listed in the bibliography.

The time required to process an application depends upon the procedures of the agency involved, the complexity of the proposal and the clarity of its presentation. The life history of an application to Research Corporation is shown in Appendix D.

Expressions of appreciation are always in order when an application is funded, and reports should be filed as required. It is often advantageous to invite representatives of the agency to campus to observe the results of their investment. If a renewal or other funding is necessary, action should be taken early enough to have an application successfully processed.

HEADS' RESPONSIBILITIES TO THE STUDENTS

Recruiting

After a lengthy period of increasing enrollments, colleges and universities are currently experiencing a leveling off or a decline in the number of students seeking an education. The recruiting of students is becoming a major responsibility for many chairmen, and the task may supersede that of attracting majors for the department. Active recruitment efforts are essential to the health of many colleges and are best conducted without pressing students to enroll in specific programs.

High school students are surprisingly uninformed about what to expect in college, and particularly about the strengths and weaknesses of various institutions. Why a student chooses a particular institution can be a matter of speculation, but it is often due to some specific thing that caught his eye. The important element is to get adequate information into his hands.

A strong factor in a youngster's choice of a college is contact with others who have attended it or who know something about it. Thus, students and alumni can make very effective recruiters. Recent high school graduates are particularly useful, and some institutions have gained many students through

the efforts of freshmen who returned to their high schools to discuss college experiences.

Recruiting efforts gain additional impetus if faculty members can visit high schools to give lectures or to help teachers with demonstrations or equipment. The chairman might make people available for such assignments, while insuring that recruiting activities do not become detrimental to the department's overall program.

Getting youngsters and their parents to visit is a good way of selling the merits of the college and the department. Careful planning will insure that the visitors are provided with an introduction to the department's academic program and its professional activities, and opportunities to meet and talk with faculty and students. Students from the department can be selected to greet visitors based on their interest and enthusiasm.

The college admissions officer is a vital ally in all recruiting efforts, and the chairman has the obligation to coordinate the department's activities with those of that office. A first step is to make sure the admissions officer and his staff understand the goals of the department and are familiar with its faculty, student population and available facilities. Admissions people might be given firsthand knowledge by inviting them to meet with a selected faculty-student group for a tour of the department.

While there may be some question as to whether or not a department's strong program necessarily attracts large num-

bers of students, it is a factor in individual selections of a college and a major. On the other hand, the right kind of publicity for the department's outstanding efforts may be far more effective in recruiting than its excellent academic reputation. Students tend to make the decision to major in the sciences during their elementary school days, as reported by W. Rodman Snelling and Robert F. Boruch in "Science in Liberal Arts Colleges."[1] It follows that contacts with youngsters through science fairs, campus tours and the like are highly desirable.

The incoming freshman class represents another challenge for department and faculty as students make initial choices or alter or drastically change direction.

The freshman course, the point where majors are acquired, is possibly the most important one in the department. It is the first hurdle, the course which gives students an opportunity to measure their interest in the field and to learn what will be required of them to obtain a degree. A special responsibility of the department chairman is to see that the course does, in fact, fulfill this role.

The content of the course and the examinations given should be familiar to the chairman. Ideally the instructor should be one of the department's best in terms of mastery of the course, teaching skills and ability to work with young people. Other faculty members might also be involved to give students

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1. "Science in Liberal Arts Colleges," Snelling, W. Rodman and Boruch, Robert F., Columbia University Press, New York, 34-45.

a more representative sample of the field and its professional practitioners.

Ultimately it is the chairman who is responsible for designing an effective recruiting program for the department to insure its existence; at the same time, he must see that potential majors are given ample opportunity to explore the field before becoming deeply committed.

Advising Students

Should students be encouraged to major in the sciences given the present employment situation? There are no clear-cut answers, but industrial openings for science-trained individuals seem to be recovering from a steep decline. And, if the outlook for science graduates is not as favorable as it was a few years ago, it is brighter than that currently reported by those who majored in other fields. Another point of view is that the student's choice of major and profession should be based on his preferences and abilities rather than on possible employment opportunities. Certainly job projections alone, often in error in the past, are dangerous grounds for discouraging a particular course of study.

To make specialization a viable option, students must be given constructive advice on their academic programs and performance, and on career opportunities in selected fields. Such advice must be based on the students' understanding of the strengths and weaknesses of the department, its special-

ties and deficiencies, and the kinds of positions for which they may qualify on graduation. A good counseling program, which may involve one or more faculty members as student advisors, begins with the chairman.

An advising program has the further functions of protecting students from unfair treatment and from faculty conflicts. Students must have the opportunity to air personal matters with faculty advisors or with the chairman if necessary. Required by the head is an intimate knowledge of how department, staff and students are performing. In addition he, or those he selects as major advisors, must be knowledgeable as to the state of the discipline and the employment situation within it.

Advising on career opportunities may prove the most difficult task since few faculty members have had experience in the industrial fields that currently promise employment. Help may be available from the institution's placement service, from alumni who can function as job counselors or provide information on openings in particular industries, and from the various industrial recruiters who visit campus.

Students should be urged to become familiar with the industrial community through reading the professional news magazines in their field. One chemistry department, for example, makes a point of giving all juniors a subscription to Chemical and Engineering News.

An advisor might make a determined effort to see that each student receives some little extra training or recogni-

tion for his accomplishments which set him apart from the large number of others who will be seeking employment after graduation.

The setting up of a committee of middle management people in industry may be a valuable project. Such a committee, composed of individuals interested in the college, might keep faculty and students posted on job opportunities and directly counsel students. The advising system could also be designed to assist recent graduates in finding jobs or relocating.

PLANNING FOR THE FUTURE

Science teachers are keenly aware that their subject matter has changed and expanded very rapidly over the years. The certainty of continued change makes it imperative to plot the future of the department.

At some institutions individual departments prepare five-year projections which are revised annually. Faculty and students are often involved in such planning efforts under the guidance of the chairman. The aims of institution and department and their responsibilities to the students are central in future proposals for curriculum, space allocations and number of students to be enrolled in the department.

Such projections are a useful means of familiarizing the college administration and other departments with the current status, goals and aspirations of any given department. Further, projections are important in coordinating the science department's plans with the other programs of the institution. At the chairman's level, a planning exercise has the benefit of promoting departmental agreement on goals and direction, and can stimulate action toward resolving the problems that appear likely to crop up. Given written objectives and a rough

schedule, the department can evaluate its progress at periodic intervals and ascertain whether or not it is straying from the path it set for itself.

The chairman has another planning responsibility. Whether appointed or elected, he will one day yield to a successor. A smooth, orderly transition is promoted if other members of the department share administrative responsibilities and understand how the department is run. Sharing such duties can also relieve the chairman of some of the routine chores connected with his office, freeing time for teaching and professional activities.

The chairman who takes a long view of the department and the institution, and who realizes the importance of the head's job in attaining the goals of both, will be as interested in grooming an outstanding successor as in achieving his own success.

Appendix A

STUDENT COURSE EVALUATION FORM

FROM: Instructors in Biology

TO: Biology Students, First Semester, 1973

SUBJECT: Course evaluation and critique

The purposes of this course evaluation form are: to provide students with the opportunity to express their opinions about their courses in the Department of Biology, to facilitate the receiving of the comments and suggestions by their instructors and to allow the compilation of the students' opinion.

Please fill out the entire questionnaire. Some of the questions may not be applicable to this particular course -- in such a case mark the "not applicable" (NA) space. Do not feel limited by the scope of this questionnaire. Your additional comments are also solicited, and can be written on the second page of this form.

Please be completely honest and fair.

Complete your questionnaire and write your comments some time after you complete the course. Do not sign the papers. They can be sent directly to your instructor at _____ or can be placed in the cardboard carton which is under the faculty mail boxes on the third floor of the Life Science Building. Thank you.

Appendix A (continued)

Suggestions for Comments

Please use the back of this sheet if necessary. As a guide to your comments consider both the positive and negative aspects of:

1. The structure of the course, including: content, requirements, and style of presentation.

2. The class meetings in general, including:

   a) instructor's ability to arouse interest in his subject and stimulate thinking; his tolerance of other viewpoints

   b) the responses, e.g., questions, comments, of members of the class to the instructor's lecture or presentation

   c) your own contribution to the class

3. The overall value of the course in your education.

Appendix A (continued)

Number and title of course _____

Are you a biology major? _____Yes _____No

What was your final grade in this course (if you are completing this form after receipt of your grades)? _____

What is your estimate of your final grade in this course (if you are completing this form before you have received your grades)? _____

1. Educational value of	5. Outstanding	4. Good	3. Satisfactory	2. Tolerable	1. Poor	NA Not Applicable
a) papers						
b) hour exams						
c) quizzes						
2. Care in grading						
3. Clarity of text						
4. Quality of the readings						
5. Was the course intellectually demanding?						
6. Overall value of the course						
7. Were the objectives of the course clear?						
8. Content and organization of lectures and/or seminars						
9. Was the instructor flexible in pacing the course?						
10. Value of laboratory work						
11. Would you recommend this course to a friend?						
12. Were the sizes of the class and the laboratory sections appropriate to the course?						
13. How do you evaluate the audio-visual supplements used in the course?						

Appendix B

FACULTY EVALUATION FORM

A Faculty Evaluation Designed to

1. Assure the faculty that they'll get fair treatment
2. Document for the administration the head's recommendation
3. Maximize pluralism within the department
4. Call on and reward justly each faculty member's greatest talent
5. Involve faculty themselves on the basis of their evaluation and in assessing their own output
6. Force the head to make mostly an objective conclusion retaining 10% as purely subjective -- and a result of multiple rather than one judgment

THE SCHEME

1. Faculty discussion of all professional inputs
2. Faculty consensus of relative significance of each input
3. Private reporting to head each faculty member's annual activities
4. End-of-year summation and calculation of overall activity index
5. Salary and promotion recommendations paralleling activity index with final judgment of head

Appendix B (continued)

A REPRESENTATIVE EVALUATION SCHEME

Activity	Point Value
A. Creative Scholarship	
1. Authorship of major monograph or text	10
2. Research publications (per paper):	
in major journal	5
in minor journal	3
3. International symposia papers	4
International 10 minute paper	2
4. National symposium	3
National 10 minute paper	1
5. State academy of science	
symposia	2
10 minute paper	1
6. Grant $÷1,000	(no limit)
B. General Institutional Affairs	
1. University-wide committee work	3
2. College-wide committee work	2
3. Department-wide committee work	1
4. Recruiting of superior students	2
5. Advisorship of school or departmental student groups	1
6. Student counseling	1-3
7. Public relations tapes and papers	2
C. Teaching	
1. Credit hours taught x 1/2	(no limit)
2. Senior research guidance (per senior)	2
3. Graduate research guidance	3
4. Graduate theses completed	4
5. Credit hours of courses revised	2
6. Confidential student evaluations (all courses)	5
7. Commentaries of alumni	3

Appendix B (continued)

To every item incorporate a further 10 percent of total as head's assessment

$$\text{Activity Index} = 1(\Sigma A_{1-6}) + 2(B_{1-7}) + 3(C_{1-7})$$

Σ Activity indices = total raise money allotted.

Raises, then, $\cong$ activity index. If A totalled 100, B 400 and C 800 points then $\Sigma(100 + 400 + 800) = 1300$ AI points.

If dean provides \$2,600 in total raises, $\frac{2600}{1300}$ = \$2/point.

A gets \$200

B gets \$800

C gets \$1600

Appendix C

REGIONAL COLLECTIONS OF FOUNDATION MATERIALS

State	*Name*	*Geographical Coverage*
Alabama	Birmingham Public Library 2020 Seventh Avenue, North Birmingham 35203	Alabama
Arkansas	Little Rock Public Library Reference Department 700 Louisiana Street Little Rock 72201	Arkansas
California	University Research Library Reference Department University of California Los Angeles 90024	Alaska, Arizona, California, Colorado, Hawaii, Nevada, Utah
	San Francisco Public Library Business Branch 530 Kearny Street San Francisco 94108	Alaska, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming
Colorado	Denver Public Library Sociology Division 1357 Broadway Denver 80203	Colorado
Connecticut	Hartford Public Library Reference Department 500 Main Street Hartford 06103	Connecticut, Massachusetts, Rhode Island
Florida	Jacksonville Public Library Business, Science, and Industry Department 122 North Ocean Street Jacksonville 32202	Florida
	Miami-Dade Public Library Florida Collection One Biscayne Boulevard Miami 33132	Florida
Georgia	Atlanta Public Library 126 Carnegie Way, N.W. Atlanta 30303	Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia
Hawaii	Thomas Hale Hamilton Library Humanities and Social Sciences Reference 2550 The Mall Honolulu 96822	California, Hawaii, Oregon, Washington
Iowa	Des Moines Public Library 100 Locust Street Des Moines 50309	Iowa
Kansas	Topeka Public Library Adult Services Department 1515 West Tenth Street Topeka 66604	Kansas
Kentucky	Louisville Free Public Library Fourth and York Streets Louisville 40203	Kentucky
Louisiana	New Orleans Public Library Business and Science Division 219 Loyola Avenue New Orleans 70140	Louisiana

Appendix C (continued)

Maine	Center for Research and Advanced Study University of Maine at Portland-Gorham 246 Deering Avenue Portland 04102	Maine
Maryland	Enoch Pratt Free Library Social Science and History Department 400 Cathedral Street Baltimore 21201	Maryland
Massachusetts	Associated Foundation of Greater Boston One Boston Place, Suite 948 Boston 02108	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
	Boston Public Library Copley Square Boston 02117	Massachusetts
Michigan	Henry Ford Centennial Library 15301 Michigan Avenue Dearborn 48126	Michigan
	Grand Rapids Public Library Sociology and Education Department Library Plaza Grand Rapids 49502	Michigan
Minnesota	Minneapolis Public Library Sociology Department 300 Nicollet Mall Minneapolis 55401	Iowa, Minnesota, North Dakota, South Dakota
Mississippi	Jackson Metropolitan Library 301 North State Street Jackson 39201	Mississippi
Missouri	Kansas City Public Library 311 East 12th Street Kansas City 64106	Kansas, Missouri
	The Danforth Foundation Library 222 South Central Avenue St Louis 63105	Iowa, Kansas, Missouri, Nebraska
Nebraska	Omaha Public Library 1823 Harney Street Omaha 68102	Nebraska
New Hampshire	The New Hampshire Charitable Fund One South Street Concord 03301	New Hampshire
New Jersey	New Jersey State Library Reference Section 185 West State Street Trenton 08625	New Jersey
New York	New York State Library State Education Department Education Building Albany 12224	New York
	Buffalo and Erie County Public Library Lafayette Square Buffalo 14203	New York
	Levittown Public Library Reference Department One Bluegrass Lane Levittown 11756	New York
	Rochester Public Library Business and Social Sciences Division 115 South Avenue Rochester 14604	New York

Appendix C (continued)

North Carolina	William R. Perkins Library Duke University Durham 27706	North Carolina
Ohio	The Cleveland Foundation Library 700 National City Bank Building Cleveland 44114	Michigan, Ohio, Pennsylvania, West Virginia
Oklahoma	Oklahoma City Community Foundation 1300 North Broadway Oklahoma City 73103	Oklahoma
Oregon	Library Association of Portland Education and Psychology Department 801 S.W. Tenth Avenue Portland 97205	Alaska, California, Hawaii, Oregon, Washington
Pennsylvania	The Free Library of Philadelphia Logan Square Philadelphia 19103	Delaware, New Jersey, Pennsylvania
	Hillman Library University of Pittsburgh Pittsburgh 15213	Pennsylvania
Rhode Island	Providence Public Library Reference Department 150 Empire Street Providence 02903	Rhode Island
South Carolina	South Carolina State Library Reader Services Department 1500 Senate Street Columbia 29211	South Carolina
Tennessee	Memphis Public Library 1850 Peabody Avenue Memphis 38104	Tennessee
Texas	The Hogg Foundation for Mental Health The University of Texas Austin 78712	Arkansas, Louisiana, New Mexico, Oklahoma, Texas
	Dallas Public Library History and Social Sciences Division 1954 Commerce Street Dallas 75201	Texas
Utah	Salt Lake City Public Library Information and Adult Services 209 East Fifth Street Salt Lake City 84111	Utah
Vermont	State of Vermont Department of Libraries Reference Services Unit 111 State Street Montpelier 05602	New Hampshire, Vermont
Virginia	Richmond Public Library Business, Science & Technology Department 101 East Franklin Street Richmond 23219	Virginia
Washington	Seattle Public Library 1000 Fourth Avenue Seattle 98104	Washington
West Virginia	Kanawha County Public Library 123 Capitol Street Charleston 25301	West Virginia
Wisconsin	Marquette University Memorial Library 1415 West Wisconsin Avenue Milwaukee 53233	Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, Wisconsin
Wyoming	Laramie County Community College Library 1400 East College Drive Cheyenne 82001	Wyoming

Appendix D

TYPICAL LIFE HISTORY OF A RESEARCH CORPORATION APPLICATION

Jan. 1 - Initial contact: visit, letter, telephone
Proposed research, significance, budget

Jan. 10 - Application forms sent with instructions, suggestions

Feb. 10 - Completed application received by foundation

Feb. 17 - Application sent to referees for assessment of research, applicant

Mar. 15 - Last of referee responses received
- Reminder to referees if necessary
* - Crucial referee comments transmitted to applicant for rebuttal
* - Applicant visited by foundation staff (if this has not been done recently; may be any time prior to meeting)

Apr. 1 - Regional Director writes staff comment
- Application sent to New York (including referee letters, rebuttal, if any, staff comment) for replication

Apr. 8 - Application "package" sent to Advisory Committee for written evaluation, recommendation, questions

May 1 - Rating sheets received from Advisory Committee

May 8 - Advisory Committee comments, recommendations compiled and mailed to Committee, Staff

May 12* - Regional Director transmits pertinent Committee comments, questions to applicant for reply

May 18 - Advisory Committee, Staff meet; final recommendations made by Advisory Committee

May 25 - Board of Directors act on recommendations

June 8 - Grant checks transmitted to institutions
- Regional Directors notify applicants of grant and reporting requirements, or of denial action

1 Year after grant made - Interim or terminal progress report, record of expenditures, reprints sent to Regional Director by Principal Investigator

*Only in certain instances

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